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Title:

Local effects and global impact in neurotoxicity and neurodegeneration: The Xi'an International Neurotoxicology Conference

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"Neurotoxicity and Neurodegeneration: Local Effect and Global Impact" was the theme of the Xi'an International Neurotoxicology Conference (XINC), held in Xi'an, June 2011. The Conference was a joint event of the 13th Biennial Meeting of the International Neurotoxicology Association (INA-13) and the 11th International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health (NEUREOH-11) of the Scientific Committee on Neurotoxicology and Psychophysiology, International Commission on Occupational Health

(ICOH). The joint efforts of the two promoting organizations and the organizers, with the outstanding leadership of Dr. Wei Zheng (School of Health Sciences, Purdue University, Indiana, USA) as Chairman of the International Organizing Committee, resulted in a unique forum where neurotoxicology was represented by numerous international delegates, spanning several continents.

The success of the meeting was overwhelming and exceeded expectations, with 225 communications from 281 registered participants. Among these, many internationally-renowned experts presented their most recent data, discussed new theoretical advances, identified research gaps and defined future research needs in the fast growing field of neurotoxicology. The scientific program of the Conference was jointly developed by the International Organizing Committee with two Scientific Program Committees, one for INA, chaired by Donald A. Fox (University of Houston, TX, USA), and one for ICOH, chaired by Roberto Lucchini (University and Brescia, Italy and Mount Sinai University, NY, USA).

The scientific program included five special presentations. William K. Boyes (US Environmental Protection Agency; EPA) presented a history of INA, Kent Anger (Oregon Health & Science University, Portland, OR, USA) presented a history of the ICOH, and Lewis Smith (University of Leicester, UK) presented a heartfelt and humorous eulogy of David Ray, a former INA President who recently passed away. The other two special presentations included keynote lectures. David Bellinger from the Children's Hospital and Harvard Medical School in Boston (Massachusetts, USA) gave the Jakob Hoosima Memorial Lecture entitled “Comparing the population neurodevelopmental burdens associated with children's exposures to environmental chemicals and other risk factors”, and Donna Mergler, from the University of Quebec (Montreal, Canada) gave the Helena Hänninen Memorial Lecture entitled “Neurotoxic exposures and effects: Sex and gender matter”.

The remaining scientific activities of the Conference included five joint (INA – ICOH) Symposia, twelve parallel Symposia (six INA and six ICOH), one joint Student Symposium and two poster sessions. The symposia titles and chairs were as follows: (JS 1) Neurologic impact from inhalation of pollutants and the nose-brain interaction, Roberto Lucchini and Bellina Veronesi; (JS 2) Developmental origins of adult diseases and neurotoxicity: Epidemiological and experimental studies, Donald A. Fox and Didima de Groot; (JS 3) Pathophysiology of manganese associate neurotoxicity, Brad A. Racette and Wei Zheng; (JS 4) Effects of chronic lead exposure on functions of nervous system in Chinese children and developing rats, Jingyuan Chen and Di-Yu Ruan; (JS 5) Integration of epidemiology and animal neurotoxicity data for risk assessment, Abby A. Li and Tina Levine; (PS 1 – INA) Neurodegeneration and neuroprotection: Neurons and microglia, Wei Zheng; (PS 2 – ICOH) Neurobehavioral and neurodevelopmental effects of pesticide exposure, Leslie London and Cheryl Besseler; (PS 3 – INA) Emerging neurotoxic mechanisms in environmental factors-induced neurodegeneration, Anumantha Kanthasamy; (PS 4 – ICOH) Occupational neurotoxicities in Asian countries, Monika Meyer-Baron and Seong-kyu Kang; (PS 5 – INA) Neurotoxicity potential of engineered nanomaterials, Robert A. Yokel and William K. Boyes; (PS 6 – ICOH) Using epidemiology and neurotoxicology to reduce risk to young workers, Diane Rohlman and Iman Nuwayhid; (PS 7 – INA) Developmental thyroid hormone disruption: Prevalence, environmental contaminants and neurodevelopmental consequences, Mary E. Gilbert; (PS 8 – ICOH) Current needs and future directions of occupational safety and health in a globalized world, Michael Aschner and

Frederick Perera; (PS 9 – INA) Strategies and tools for preventing neurotoxicity: To test, to predict, and how to do it, Jordi Llorens; (PS 10 – ICOH) Chronic solvent induced encephalopathy: a step forward, Gert van der Laan and Markku Sainio; (PS 11 – INA) Translating neurobehavioral test results into in vitro readouts, Christoph van Thriel and Marcel Leist; (PS 12 – ICOH) Manganese exposure and cognitive deficits: a growing concern for manganese neurotoxicity, Harry Roels and Rosemarie M. Bowler.

The scientific program also highlighted the work of six students, listed elsewhere (Zheng, this volume), who were awarded and invited to present their communications orally in the Student Symposium, chaired by Jordi Llorens and Roberto Lucchini. This Symposium is a tradition at the INA Meetings, reflecting a major goal of the Association in its attempt to recruit, retain and energize young investigators to pursue careers in neurotoxicology. The quality of the presentations in this Symposium demonstrated the outstanding scientific pursuit of young leaders in neurotoxicology and the viability of the field in the foreseeable future.

The two poster sessions included more than 120 communications and provided ample opportunity for scientific discussion at the individual level, greatly contributing to one of the major goals of the Conference, to facilitate contacts among scientists in the field of neurotoxicology from around the world, and working in any methodological subfield, from molecular in vitro neurotoxicology to human exposure assessment through epidemiological studies. Here, as well as in the Symposia, the XINC fully fulfilled the expectancies of interaction among members and followers of the two promoting organizations, which share their focus on neurotoxicology. We look forward to future growth in the interaction between INA and NEUREOH, including joint meetings and other activities, in addition to the establishment of interactions and collaborative contacts at the individual level.

In the scientific sessions, the foreign attendees were acquainted with particular problems in neurotoxicology that face emerging economies, such as China, and how Chinese neurotoxicologists confront them. At the same time, the Chinese attendees had the opportunity to learn from the many foreign experts in the field who participated in the Conference. We have no doubt that the XINC will mark a point of substantial strengthening of the Chinese neurotoxicology community and its interactions with foreign researchers and societies.

The Conference was held in a splendid ambiance, enjoyed a brilliant organization and included an exciting social program. The Local Organizing Committee, chaired by Jingyuan Chen, deserves a large amount of the credit for an outstanding meeting. The meeting venue and program offered an excellent setting for developing relationships among participants in a friendly and relaxed atmosphere, where results and hypothesis were openly discussed off the record. This atmosphere is well known to facilitate the emergence of new ideas and the birth of new collaborative projects. In addition, foreign attendants were exposed to the wonders of Chinese hospitality, tradition, culture and nature, which they undoubtedly enjoyed.

In summary, the XINC successfully joined the 13th INA Meeting and the 11th ICOH Symposium providing a highly successful and truly global neurotoxicity meeting that will stand as a hallmark in the field of neurotoxicology.

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